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The transformative potential of improvising solidarity networks in a disrupted context

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Introduction

The aim of this paper is to analyse how solidarity networks (Smith, 2009) draw on improvisation capabilities to transform organizations in an extreme context. Indeed, the challenges associated with the risks of crises induced or not by human activity, which are more often systemic, demonstrate the need to strengthen the response capacities of organisations and institutions.

In March 2020, the Covid-19 pandemic, by its intensity, disrupted organisations, and institutions, which were unprepared for such an upheaval. Because it affected the lives of individuals but also the functioning of institutions and organisations (Hannah, et al., 2009), the pandemic constituted an extreme context (Hällgren et al., 2018), sometimes revealing their disorganisation (Roux-Dufort & Vidaillet, 2003) but also their capacities to improvise responses in the emergency (Majchrzak et al., 2007). In France, the closure of universities and schools on March 12, to slow down the spread of the epidemic, particularly affected the education sector. In this extreme context, university members were in the forefront of finding urgent and unprecedented solutions to ensure the education of millions of students deprived of their academic institutions. To understand the response in this extreme context, we focus on the case study of a French public institution of higher education that developed improvised innovative responses and revealed new solidarities. Emerging or growing out, some collectives of this institution structured themselves into flexible networks driven by mutual aid values to respond to the imperatives of the context.

A developing body of research that examines response mechanisms in *extreme contexts* (Hällgren et al., 2018) shows that such *improvised action* can be an effective and innovative response (Chédotel, 2012, Vera & Crossan, 2005), thanks to temporary groups (Majchrzak, et al., 2007) that form flexible *solidarity networks* (Smith, 2009). In an extreme disrupted context (Hällgren et al., 2018), improvised responses, defined as the deliberate merging of the conception and execution of a new action (Kamoche et al., 2017), allows for rapid reorganisation (Bechky & Okhuysen, 2011) through solidarity networks. We define sensemaking as the ongoing coherence-creating mechanism that links beliefs, observations, and actions to respond the unexpected (Schildt et al., 2020). Thus, through interactions that lead to discussions and negotiations (Maitlis & Christianson, 2014), solidarity networks evaluate and question their environment by engaging in *improvisational sensemaking* (Schildt et al., 2020). Furthermore, several empirical surveys show that by strategically anticipating their future actions (Sandberg & Tsoukas, 2015), individuals, and more specifically managers, influence (Gioia & Chittipeddi, 1991) improvisational sensemaking.

This stream of research concludes that organizations can learn from such improvisational sensemaking (Vera & Crossan, 2005). But the results of existing empirical research about their transformative potential over time are ambivalent. Indeed, some papers conclude that making sense by improvising responses in a disrupted context constitutes an opportunity for transformation (Orlikowski, 1996; Christianson et al., 2008), in ways that can make an organisation less vulnerable (Williams et al., 2017). However, some other articles also tend to show that organisations often struggle to learn from a disrupted context, restraining transformation (Starbuck, 2009).

In this context, we address the following research question: **How can solidarity networks that make sense by improvising in a disrupted context finally transform the organisational environment?** This paper aims to go beyond the current ambivalent results, to gain a better understanding of the context in which improvisations by spontaneous collectives acquire such a transformative power. This has several advantages over the current literature. On the one hand, this literature does not address the way in which solidarity networks may transform their environment in response to a disrupted context. On the other hand, given the lack of empirical research on disrupted contexts (Hällgren et al., 2018), the pandemic provides an unprecedented opportunity for feedback to better understand how networks make sense (Christianson & Barton, 2020) by improvising and transforming their environment to better respond (Frykmer, et al., 2018).

In the first part, the literature review focuses on the concepts of collective improvisation and sensemaking. Then we detail the research methods: an exploratory study conducted after the first epidemic wave in March 2020, which enabled us to identify situations of networked collective improvisation. A single case study was then conducted within a public institution of higher education facing the disrupted context, to address our research question. In the third part, we mainly present the results of our case study.

1. Theoretical background

First, we analyse how solidarity networks act in a disrupted context (1.1). Then, we deepen improvisational sensemaking in a disrupted context (1.2). Finally, we consider the relationship between improvisational sensemaking and organisational transformations (1.3).

1.1 Solidarity networks in extreme contexts

To begin with, we define and characterise the disrupted context. Then, we define the solidarity network involved in understanding and responding to this context.

Disrupted contexts refer to extreme events likely to affect the psychological and physical health of individuals, but also to threaten the functioning of organisations (Hannah, et al., 2009). Unexpected (Bechky & Okhuysen, 2011) and uncertain (Barton, et al., 2015) extreme events are accompanied by confusion and time pressure (Pearson & Clair, 1998). Hällgren, Rouleau and DeRond (2018) draw up types of extreme contexts, according to the activity of the organisation and the potential or actual occurrence of one or more extreme event: first, risky contexts are characterised by near-constant exposure to extreme events. Organisations operating in such contexts place particular emphasis on their reliability. Then, emergency contexts involve organisations dedicated to emergency, facing an extreme event. Finally, in disrupted contexts, an event interrupts organisational activity and generates improvised responses.

In emergency and disrupted contexts, individuals respond either by reorganising their roles and routines temporarily within the collective (Bechky & Okhuysen, 2011) or by forming temporary groups (Majchrzak et al., 2007). To understand this phenomenon, we mobilise the concept of network in the organisational field, which defines it as a modular and flexible structure, more or less formal, which makes it possible to coordinate activities (Pesqueux & Ferrary, 2004). Temporary collective actions in extreme contexts are enabled by emergent networks (Chédotel, 2012). A network organisation also contributes to a better understanding of a situation and helps to develop responses (Coursaget & Haas, 2015). Networked organisations help to enhance the

complementarity of autonomous and interdependent actors or entities, despite their physical or cognitive distance (Assens, 2013, p.15). Networks, and their cohesive strength, are influenced by the links and social interactions that unite the actors and entities (Granovetter, 1977). Solidarity networks are then networked organisations whose cohesive strength is maintained by social values based on mutual support (Smith, 2009).

1.2 Improvisational sensemaking in disrupted context

In this section we define improvisation and sensemaking, and link one concept to the other through improvisational sensemaking.

A stream of research that studies improvisation in extreme contexts (Vera & Crossan, 2023) shows that improvised collective action can be an effective and innovative response (Chédotel, 2012). Defined as the merging of the conception and execution of a new action (Kamoche et al., 2017), improvisation enables continuous reorganisation, when extreme events unfold. Examples of successful networked improvisation are described in emergency contexts such as interventions in response to natural disasters (Chédotel, 2012) but also in disrupted contexts such as terrorist attacks (Mendonça, 2007). In these extreme contexts, the interruption of operations and the resulting confusion generate a sensemaking mechanism (Sandberg & Tsoukas, 2015) that enables individuals and collectives to continue the activity (Weick, 2010).

We define sensemaking as a social mechanism in which interacting collectives build their comprehension and actions through discourses (Maitlis, 2005) in an uncertain environment (Weick, 1995). Thus described, we consider sensemaking as the formation of intersubjective meaning between individuals involved in joint actions, likely to cause discussions and negotiations (Maitlis & Christianson, 2014). As a dynamic mechanism that unfolds to cope with the unexpected, we define sensemaking as an ongoing creation of coherence between beliefs, observations, and actions (Schildt et al., 2020). Stigliani and Ravasi identify four phases : the bracketing phase (1), which enables the extraction of perceived signals from the flow of experience, the articulation phase (2), which is the understanding and formulation of temporary interpretations, the elaboration phase (3), which is the progressive integration of understanding into more complex cognitive frameworks, and the influence phase (4), which enables the dissemination of what has been collectively elaborated to other levels of the organisation (Stigliani and Ravasi, 2012). The influence phase can be related to the concept of sensegiving, which explains how individuals, and more specifically leaders, strategically influence the sensemaking (Gioia & Chittipeddi, 1991).

In this article, we draw on the concept of improvisational sensemaking, that we define as an adaptative mechanism that can enable solidarity networks to provide responses in a disrupted context. This places sensemaking but also sensegiving within a dynamic and provisional temporality (Schildt et al., 2020). This mechanism describes how in a disrupted context, individuals, whose objectives are in tension, make sense by improvising under the influence of sensegivers (Schildt et al., 2020).

1.3 A potential for transformation

In this section we review the literature about the potential for transformation of improvisational sensemaking.

By engaging in improvisational sensemaking, the literature shows that collectives are able to learn (Miner, et al., 2001), question and modify their environment continuously, thus reconfiguring the knowledge structure and identity of the organisation (Schildt et al., 2020). This process may thus provide novel thinking and acting that enable or inhibit change, depending on how members take hold of and develop novel understandings and practices (Maitlis & Christianson, 2014). Understanding such potential of an organisation in an extreme context can help reconfiguring routines that are important for its adaptation (Christianson, et al., 2008). This opportunity for organisational reconfiguration carries a learning potential (Roux-Dufort, 2010) that can enhance capabilities to anticipate future crisis (Williams et al., 2017).

Thus, making sense through improvisation may enable collectives to engage in a learning and change dynamic that has the potential to transform their organisation sustainably (Orlikowski, 1996) to better respond in a disrupted context. However, the literature shows how difficult it is to learn from crises, due to cognitive, social, and cultural barriers that can hinder learning at the organisational level (Starbuck, 2009). For this reason, disrupted contexts can weaken the potential for transformation (Roux-Dufort, 2010), particularly when the organisation does not engage in reflective practices (Colville et al., 2013). A trajectory that aims to maintain a form of “status quo” can limit reflexivity and learning after a crisis (Roux-Dufort, 2010). Consequently, learning from experiences and transforming the organisation to better respond in such contexts contains many obstacles.

To conclude the literature review, we need to understand how solidarity networks manage to learn from improvisation in disrupted contexts (Frykmer et al., 2018) to develop the transformative potential of organizations. Moreover, we have identified that the literature

addresses improvisational sensemaking but does not address the way in which solidarity networks transform their environment following a disruption. So, we go a step further by seeking to analyse how these solidarity networks initiate transformations to better respond in a disrupted context. Thus, by mobilising the concept of improvisational sensemaking, we analyse how these solidarity networks of an academic institution transform the organisational environment through improvising. Now we present our methodology, which led us to carry out an exploratory study and a case study.

2. Methodology: a case study of an academic institution in a disrupted context

The Covid pandemic is a novel opportunity to better understand how solidarity networks make sense (Christianson & Barton, 2020) in a disrupted context (Hällgren et al., 2018), leading to enhance the transformative potential of organizations. This led us to conduct an exploratory study.

2.1. Data collection

Our data collection includes in depth interviews and secondary data: nonparticipant observation of the organisational environment, attending meetings, and internal documents from the studied organizations (Table 1).

At first, we conducted a two step exploratory study. From October 2020 to April 2021, we conducted an exploratory study (T1) involving ten individuals working in two hospitals, an academic institution, and within social and medico-social organisations. They all had contributed to the coordination of emergency interventions (emergency context) or worked within organisations that improvised novel responses (disrupted context) (Hällgren et al., 2018) during the first epidemic wave. This phase of the study helped to collect data through individual, undirected interviews (Bertaux, 1997), oriented to understand collective mechanisms. It enabled us to identify situations of collective improvisation using an abductive approach to knowledge construction (David, 2000). A second period of semi-structured interviews (T2), from October 2021 to June 2022, aimed to look back at the collective improvisation experience one year after the first interview. During this period, we interviewed nine respondents out of ten.

At the end of this exploratory study, we selected the academic institution as a case study. Indeed, the two exploratory interviews showed that this organisation was an exemplary case to study because it had organised itself to improvise novel responses and presented collective improvisations as a success but also as a source of new institutional strategies. Solidarity

networks were also fundamental in responding to the disrupted context (Hällgren et al., 2018). In addition to the vice presidents, we interviewed eighteen employees (teaching and administrative staff) with operational or management functions, three students, and one external partner between January and July 2022. We use in total 31h and 26mn of recorded interviews in this paper, from the exploratory study and the case study. We also collected various documents during or after the interviews, attended an informational meeting and a consultative workshop within the university. The table below presents the respondents and summarises the collected data (Table 1)

Table 1 – Data collected & respondents

	Phases	Recorded interviews	Respondents	Organisations	Observations	Documents
Exploratory study	Phase 1: Oct. 2020 to Apr. 2021 (T1)	10 individual undirected interviews (11h31mn)	Coordinating doctor Work psychologist Healthcare executive Nurse Radiologist Medico-social auxiliary 2 Vice-Presidents Regional delegate Volunteer	NGO University hospital centre Cancer institute Medico-social company Academic institution Foundation		Surveys Annual report Job description Instructions Press releases Institutional website
	Phase 2: Oct.2021 to June 2022 (T2)	9 from 10 initial respondents / individual semi-directed interviews (10h53mn)	Same respondents and organisations except coordinating doctor		Site visit (Hospital, Medico-social company, Academic institution)	Feedback reports Working documents

Case study	From January 2022 to July 2022	19 individual & collective interviews (22 respondents) (Total 26h27mn)	2 students 2 Lecturer-researchers 2 teachers President Chair Deputy Vice President Student Vice President 2 Deans of Component Department Director 2 Service Managers 2 Project Managers Psychologist Social worker General practitioner Foundation Delegate External partner (welfare organisation)	Academic institution	Mid-term review (informational meeting) Consultative Workshop	Handbook Logbook Decision statements Working Handbook Logbook Decision statements Working documents (presentation material, Excel data sheets, minutes pictures) Institutional documents Press releases
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2.2. Data analysis

Phase 1 (T1) of the exploratory study began with ten interviews transcribed and then subjected to thematic categorisation (Paillé & Mucchielli, 2016), using pivot tables in Excel spreadsheet software. Twenty-six emerging themes were organised into two thematic trees named *extreme contexts* and *construction of collective action*. These thematic trees structured the interview guide for the second phase of the research (T2). The questions focused on the perception of improvised actions, and their consequences on the organisations. The following nine interviews from phase 2 were transcribed and categorised into themes using NVIVO software, based on a coding grid developed from the emergent themes from phase 1 and the literature review. The themes *capitalisation* and *recognition* emerged from this second thematic coding. The secondary data was also used for triangulation purposes. The results of the exploratory study helped structure an interview guide for the case study. The question focused on the collective understanding of the situation, on decision making and improvised action, on reasons for action and on the consequences of the improvisation. The twenty-three individual and group interviews were then categorised using NVIVO software. A coding grid was developed before, based on the exploratory study and the literature review. The secondary data was also used for triangulation purposes. Ten themes and subthemes from the coding table are mobilised in this article (Table 2): some codes present in the literature review (*context, extreme context, improvisational sensemaking, normalisation, organisational environment, and transformation*) and some emergent codes from the exploratory study. These emergent codes enabled us to

highlight how an organization can facilitate transformation thanks to networks improvisational sensemaking (*capitalisation, flexibility, networks, relational values*), but also key difficulties (*recognition, and vulnerability*).

Table 2 - Coding grid

Themes & subthemes	Description
CAP-Capitalisation	A mechanism for safeguarding tangible and intangible assets following an effort to reflect on practices in an extreme context, which can be used by the organisation in other crisis situations
CX-Context	Internal and external context of the organisation
CX-Extreme context	Contexts that have the potential to affect the psychological and physical health of individuals, but also to threaten the functioning of organisations (Hannah, & al. 2009)
CX-Organisational environment	Internal and external context of the organisation
FLEX-Flexibility	Organisational, human and/or material capacities and dynamics for change in an extreme context
IMP- Improvisational sensemaking	Collective creation of coherence between beliefs, observations, and actions, enabling rapid and temporary decisions to be taken in an extreme context (Schildt, 2020)
IMP-networks (during improvisation)	Set of entities (organisations, groups, individuals) linked to each other with the common objective of circulating material or immaterial resources during an extreme context
NORM-Normalisation	Maintenance of usual organisation and practices, or maintenance of crisis management practices after an extreme context
RECO-Recognition	Practices or conceptions by which individual subjects or social groups are confirmed in certain of their qualities during or after an extreme context (Honneth, 2006)
TRANS-Transformations	Changes resulting from collective learning and reflexivity after an extreme context
TRANS-Reflective sensemaking	Reflective process undertaken to transform practices, the organisation (Schildt, 2020) or the organisational eco-system
TRANS- Transformation of the ecosystem	Transformation of the organisation's eco-system because of collective learning and reflexivity in an extreme context
TRANS-Transformation of practices	Adaptation of practices resulting from collective learning and reflexivity in an extreme context
TRANS- Organisational transformations	Adaptation of the structure of the organisation (material & human) resulting from collective learning and reflexivity in an extreme context.

Themes & subthemes	Description
VAL-Relational values	A system of individual or collective beliefs and convictions based on (positive) human relationships which structure representations (interpretative framework) and direct action.
VUL-Vulnerability	A set of malfunctions and mechanisms produced by the organisation that weaken the system, making a crisis possible (Williams, et al. 2017)

Following the coding work and using matrices (Miles & Huberman, 1991) produced on an Excel spreadsheet, we finally synthesised some data on an emergent result in a dedicated template. Indeed, reading the coded verbatims, we noticed that different types of networks emerged to face the disrupted context. For each type of network, we then identified the changes, the nature of the transformations and, finally, the conditions that led the organisation to initiate transformations enabling it to respond better in extreme context. We present such findings in the following section.

3. Improvisational sensemaking in a disrupted context: a lever to organisational transformation

The first part of the results traces the way in which the networks improvised actions during the first months of the pandemic. We show that solidarity networks responded urgently by mobilising around a common objective, then engaged in action through discussions and negotiations, but also elaborating tools and material for action and mutual understanding. With less urgency, the networks later reflected on the meaning of their actions to improve their improvised actions. In a second part, we describe how this improvisational sensemaking can pave the way for transformations.

3.1. Improvisational sensemaking of networks within an academic institution

In this subpart, we focus on the case study within the academic institution, during and following the lockdown in France. We situate the period of collective improvisation between 12 March 2020, the day of the first announcement of university closures by the French President, and the end of the first wave in July 2020. The respondents describe a progression of actions to meet the needs generated by the two successive announcements.

The first period, marked by the two successive presidential announcements of restrictions on movement, on 12 March for universities and then on 16 March for the country, was perceived as a rupture. During this period, confusion was more pronounced in some administrative

departments, notably in the absence of managerial support. Some players describe a temporary interruption in activities accompanied by a profusion of meanings:

*It was a period when we had to reorganise ourselves to adapt to a new way of working. I know that in the first week, well for me, for the social service, there was a period of latency, maybe a week. (...) Because what are we going to do now? Because now that we're at home, well, we're going to be at home. Are we going to be able to talk to the students we're following up, in other words, what's going to happen? We've had this period of uncertainty, and it's also been reflected in the appointments, because we haven't actually had any students straight away. **Social worker***

Despite the geographical distance constrained by confinement, spontaneous responses rapidly became collective. The university, as part of a territorial ecosystem, is made up of many informal and formal networks that enabled individuals to get in touch and access resources quickly (this point will be detailed in the subpart 33). The respondents described how these networks enabled collectives to make sense from their improvisations through successive phases, to create coherence:

During the very first days, the mutual aid and solidarity supported by these numerous relational networks and technological resources (social networks, video-conferencing tools, collaborative tools made available by the university, etc.), made it possible to improvise immediate responses (phase 1 of improvisation). Areas where people could meet remotely, mainly by videoconference, or on site, such as an emergency platform, were set up urgently to initiate collective action. Mutual aid encouraged the **convergence of different meanings** towards the same objective, such as setting up distance learning courses, or setting up a childcare service for hospital carers.

*At the start, it was really just childcare offered to carers who were obviously going to be in greater demand. So it seems to me that at the start, ** (Initial Platform) was really all about childcare. The absolute priority was to enable carers to go to work by offering childcare solutions. **Dean of Component 1***

Then some initiatives took place, which led to the structuration of the improvisation (phase 2 of improvisation). Members of the university networked to respond immediately to the crisis at hand, but the university also built up some organizational means to support them:

At the outset, we didn't really ask for help from the reception staff, but many of them said, "How can I help?" (...) In the first weeks of the crisis, there was a huge surge of solidarity. Because we had thought of opening a sort of day nursery for the children of the nursing staff, but we only did it for a few days because the need dried up after that. We then mobilised, or at least proposed to the ARS - the regional health agency - that we could deploy a platform to recruit students, a student job to assist the nursing staff.

*And it was *(Deputy Chair) who suggested it, so it's a little idea that came from the university. **President of university***

This collective improvisation was accompanied by the **elaboration of meaning** using objects, enabling information to be shared and disseminated on a local scale (plans, diagrams...) or on a network scale when the players were geographically dispersed (shared spreadsheets). Building on these means, informal networks facilitated the transmission of information, the influx of resources, both material and human, and the bringing together of players with a wide range of skills:

*I found that our driving force was also the mobilisation of the chain, the health platform that was set up. And that was the beginning of the collective mobilisation, and that's when I realised that at the university there are all kinds of resources: pharmacists, doctors, scientists, administrative staff, and others who are more involved in logistics. There was a place for everyone, in fact. By bringing together everyone's skills, we were able to create a chain, and that's when I said to myself, the university has a wealth of skills. **Lecturer- researcher***

Over time, with less perceived urgency, the teams then made sense from their improvisations. Concretely, they readjusted their actions, iteratively, by making corrections, improvements, or modifications according to changing needs (phase 3 of improvisation). **Reflections on the meaning of collective actions** were accompanied by the mobilisation of the network to access appropriate resources.

*for optimising deliveries, I'd been looking around for a dedicated tool, and I got in touch with a specialist company that made its software available to us free of charge for a month, which enabled us to make optimised deliveries for a few weeks, The tool enabled us to optimise the tour, both in terms of distance and in terms of the time we had to devote to it, so we saved time there too. **Vice President 1***

Several improvements were carried out collectively during the action, thanks to this improvisational sensemaking:

*We had table lists for everything. There was a time when that was no longer possible. We needed to create a metafile that would allow us to list everything, to know who was doing what at what time, who was carrying out what tasks, who was responding to what requests. In fact, the students helped us a lot with this and came up with ideas for columns, in other words, they made a lot of suggestions to make things easier, because they experienced things as we do on a day-to-day basis, so the thinking was relatively common. **Project manager 2***

An improvement approach was followed by more in-depth questioning and reflection and research form more consistency, during a lull in the epidemic wave and after the end of the

lockdown on 11 May, to prepare for the start of the new school year. This period of questioning paved the way for future transformation of the institution:

We've switched all our staff to work remotely. So our teleworking framework was completely blown out of the water. We absolutely had to find some coherence for the resumption after the summer. So we had to rethink our teleworking framework, even within a framework that was still the COVID situation. But we had to give meaning and organisation back to this. We have therefore started to put this work in place to ensure that it holds and that it is better structured, so that teleworking staff are once again in a framework that is normal, for implementation from September 2020. We are also considering the possibility of reviewing our teleworking framework. Vice-president 3

To conclude, our findings show that an improvisational mechanism led by networks was accompanied by a sense making mechanism evolving in phases, starting with a convergence of objectives driven by solidarity (immediate crisis period), then becoming increasingly elaborate (structuration period), accompanied by a search for more coherence. This progression was enriched by experience, but also by reflections on practices and working conditions evolving towards a reflective phase (improvement period). Initially aimed at improving present conditions by questioning the achievements, this improvisational sensemaking evolved into a forward-looking mechanism for anticipating the future, paving the way for organisational transformation.

In the following section, we take a closer look at the various action networks that have improvised responses, and then we examine the changes resulting from these actions.

3.2 Creating organizational means to support networks collective improvisation

The day after the announcement, on 13 March, the newly appointed governance team (New elections and appointments of Vice Presidents on 12 March 2020 had preceded the presidential announcement of the closure of the universities by a few hours) set up a central crisis unit to coordinate the continuity of activities. The crisis unit's priority was to ensure the continuation of teaching activities, and it was therefore divided into a central decision-making unit and six other divisions (educational, digital, research, administrative, international relations, and citizenship continuity). Each division was made up of directors and vice-presidents in contact with the university's various units, enabling ministerial evolving decisions and changing information to be quickly passed on to each component and department of the university. A division dedicated to citizenship and life within the institution was set up to ensure social relations and solidarity.

So we organised ourselves into star pilots, and then these star pilots were accompanied by other pilots (...) and I was a co-pilot so to speak, and so I was the right-hand woman of several star pilots, and we deployed our various actions on the ground in this way. So there was a crisis unit, which was in the action tree, and we intervened on the ground.

Vice-President 2

The organisational structure of the crisis unit, which initially centralised decision-making, quickly changed its modus operandi, adapted to the long-term nature of the crisis. The decision-making perimeter was expanded to include more staff and develop wider areas for negotiation and discussion, with the aim of building cohesion:

The challenge was not to make quick decisions for a few people, but to find a way of working that would be stable and sustainable for the whole Community. So we very quickly broadened the scope of crisis management to include all the vice presidents, which we hadn't done initially, staff representatives -we made a very large number of Health, Safety and Working Conditions Committees- all the directors of components, and so on, realising that the issue was going to be cohesion and long-term support.

Deputy Chair

Interdependent with the central unit, which relayed instructions from the Ministry of Education, the units were organised as forums for negotiation and discussion, thus facilitating the implementation of actions on the ground. In this way, new and evolving rules for action were collectively devised and implemented rapidly, against a backdrop of frequent changes to the regulatory framework imposed by the government. A pre-existing safety and prevention network, linking the field to the decision-making bodies, made it also easier to implement and continuously readapt changing instructions. A technical unit linking various components and bodies was also set up in June to propose technical solutions and discuss their implementation collectively:

We set up this unit in June 2020 with the management, the vice-president, the general services department, the communication department, our property asset department, the occupational health department, the university occupational health department, and us, the prevention and safety department. This unit met once a week, every Thursday from 9 to 10 a.m., to discuss preventive health measures in the light of the Ministry's instructions and the resources we had in place. And we agreed on things that were then validated by the Deputy chair at the steering committee. We were a technical unit that proposed technical solutions to the health organisation. So we did that through Teams (...) Every week we met to develop the Activity Continuity Plan, develop the measures, re-purchase self-tests... Just as we were developing the instructions (...) there were also representatives from the Health, Safety and Working Conditions Committees, which enabled them to be involved in our organisation and to relay the information as staff representatives. ***Department Director***

In parallel with the structuring the decision-making network, individuals (teaching and administrative staff, students) as well as external players organised themselves spontaneously

and flexibly, acting both inside and outside the organisational perimeter.. The respondents described several types of response, ranging from collective mutual aid to ad hoc emergent structures to ensure the continuity of activities or to carry out civic actions. The following sections outline how networks improvised actions based on solidarity.

3.3 Adapting practices through community networks

From 13 March, the teaching staff immediately set to work adapting their courses and providing distance learning. Mobilisation of existing technical support facilitated the use of tools by the teaching staff, most of whom had never provided distance learning courses. Resource persons were appointed on an ad hoc basis to provide remote technical support. Teachers informally shared their practices to help each other forming a network based on mutual aid:

*There is this explicit knowledge with the channels that we have organised, necessarily in a more structured way, perhaps centralised but in any case structured, and then there is also this implicit knowledge which existed from the outset through the community of practice but also through practices between educational engineers and teachers, between people who already knew each other, so it's true that we left this implicit knowledge, and these implicit networks, these networks of implicit knowledge. **Vice president 2.***

The tools available were used by teachers, who were able to self-train through tutorials or informal exchanges of practice, but also through the sharing of experience forming a solidarity-based community practice network. More experienced teachers, forming a network of experts helped to improve technical solutions for distance learning:

*And so we've learned from the experts that they're always there, they're always at the webinars, they're always there at the training courses, to take things even further, because they want to go even further. (...). What's more, every time the educational engineers worked on the webinars using Teams, they gave participants the opportunity to upload files that would enable them to go even further, to create an expert system. **Vice president 2***

The collective mobilisation of the various technical teams made it possible to make the tools already available work and to facilitate their use. These pre-existing networks of support and expertise were extended, creating new synergies between different skills and professions to develop solutions for distance learning and assessment. A respondent also recounted her experience of joining an external community practice network due to a lack of motivation on the part of other teachers to develop a new solution requiring a high level of investment:

So in fact, once you get into it a bit, you realise that it's a huge community that provides all the help it needs to build its media free of charge. (...) It takes time, but on the other hand it's accessible, the community makes it accessible, not necessarily the software

*publisher, but in any case the community that has been created around it makes it accessible. (...) I said to myself, if this is an opportunity to learn. **Teacher***

Network of schools or professions were also used as a means of exchanging information and experience to respond rapidly. These community networks provided a forum for exchange and sharing, leading to the dissemination of solutions or, on the contrary, the identification of problems.

*We had the advantage of being able to have information points that were complementary or sometimes a step ahead of certain information that might arrive at the university and then come down to us. We sometimes had live information. That was also the strength of a network, and what's nice about a network like ours is that we can share, and sharing information and experiences was also an important point. **Dean of component 2***

The results show that networks facilitated the response to the emergency, but also helped to be more reflective, thanks to the network of experts, so as to develop practices during the improvisation improvement phase.

3.4 Building up civic solidarity through networks improvisational sensemaking

During our empirical research, we observed how networks made sense from improvisation. Here is an example.

Within the Faculty of Health, a telephone platform was set up in a few hours on the initiative of the Dean then supported by the institution. Students were put in touch with health care personnel through the platform to meet their need for childcare. A few days later, pharmacists from the faculty, aware of the university's material capacity to produce hydroalcoholic solution, set up a production workshop within the faculty itself in response to shortages. Networks helped to mobilise a large number of participants:

*The students are part of a network, so we started calling a few students, so we had a small pool of students, and then there were colleagues who said to us, "If you need a hand, we'll come to you. **Lecturer-researcher***

Following the childcare mission, a platform for citizenship and solidarity was gradually set up, emerging from relational networks, supported by institutional decision-making networks:

*The whole thing was created from scratch in medicine, in a room in the faculty, in the Health Training and Research Unit, where an idea germinated with *(Vice President 1) and *(Project Manager), myself, to come up with something that could be called a platform (...). **Department Director***

*Yes, we've had some responses, people who volunteered, there are also people in our respective networks who have mobilised. They were from components in the departments, it was quite eclectic. **Project Manager 1***

A solidarity network made up of social organisations, health organisations, university staff and students, organised through the platform. It was then put into action to respond through solidarity actions. The platform built from relational values, such as solidarity, commitment, and mutual trust helped translate needs into actions and coordinate the operations. This organisation made it possible to remedy shortages of protective equipment (masks, hydroalcoholic solution, etc.), to support health professionals who were short of staff and to help students in vulnerable situations (food aid, purchase of computer equipment, etc.).

*The university is a resource for the region. (...) By getting involved, the university provided a practical, pragmatic, concrete response. (...) The relationship that gradually developed with companies like **(Firm 1) and **(Firm 2), because at a given time there was a question of volume, alcohol and production volume, (...). The resources of the region, the relationship with the economic players, the huge human resources we had, and then technical and scientific logistics, of course. **Foundation delegate***

A food distribution for students, first improvised with a local association led to the development of food and digital aid. Thus, food distribution was organised with this association from mid-April to mid-July 2020:

*The involvement of **(welfare organisation) was more by chance. Again with the hydroalcoholic solution, we went to distribute 3 or 4 litres to **(welfare organisation) because we knew them and they had extra sandwiches. (...) . So that's where it all started, and very quickly the idea came about for the catering and food services, the idea of working with **(welfare organisation) to come every week. **Department Director***

With the emergence of precarious student situations made visible by the confinement, a wider network of stakeholders and skills participated in an aid program organised through the platform. The technological resources developed for the coordination and communication of a networked organisation and the geographical dispersion of the various players involved was adapted and improved to keep pace with the evolving missions. A mass text message developed on an ad hoc basis and sent to all the students was an unprecedented and rapid way of gaining a better understanding of each student's situation and rapidly reporting needs. The needs were then redistributed via the platform to the network of professionals involved in helping students:

It was passed on gradually, progressively. Overall, I think there was good coordination, but also thanks to the pilot unit, which passed on information and acted as a link between the various players, there was also good identification of things that weren't working properly and then going to the right people to try and put things right. (...), so it's also thanks to the networks that we've been able to unblock situations. If there wasn't a solution straight away, we tried to see who or what organisation we could call on to find solutions. (...) 72 hours to launch the SMS, create, compose the SMS, send it and then have the tools behind it and train the team of callers. Even the feedback we've had from students, I remember one text message (...) saying, thank you, it was delivered to

*me in a very short time and that's heart-warming. To see that, yes, there are dysfunctions, but we managed to find some fluidity, and there was also goodwill on the part of colleagues whose initial tasks weren't theirs, but who wanted to take part in this momentum too. **Project manager 1***

We also observed that various networks were involved in improvisational sensemaking. The table below (Table 3) summarises the characteristics of the many networks involved in the improvised responses. We divide them into two groups: firstly, informal meta-networks, with undetermined objectives, are permanent flexible resources that adapt to changing needs. Secondly, networks whose links between members and specified objectives are specified are either institutional networks or ad hoc networks organised with organisational resources. We highlight the nature of the links between players or entities, the structure determined according to a time scale, the objectives and the common frameworks structuring the collective action. This summary enables us to categorise the networks involved in collective improvisation:

Table 3: different types of networks

	Networks mobilized in extreme contexts	Nature of links	Structure /temporality	Collective goals in extreme contexts	Common framework between units	Network categorisation
Meta-networks - Variable links and objectives	Personal relational network (teaching & administrative staff, students)	Transmission Complementarity	Flexible resource	Solidarity	Values of solidarity	Relational network
	Intra-university network	Transmission Complementarity	Flexible resource	Solidarity	Values of solidarity	Intra-organizational network
	Faculty of health network (hospitals, practitioners & health organizations) University network (Business, associations) Territorial ecosystem	Transmission Complementarity	Flexible resource	Solidarity	Values of solidarity	Intra-organizational network Ecosystem
Networks - Specified nature of the links & objectives	Network of state and local authorities Networks of university steering bodies	Délibérative links	Ad Hoc Institutional structure	Adapting & designing new rules of action Decision-making	Discussion and negotiation areas	Decision-making network
	National network of university presidents and vice presidents Other national network (Foundation, Business School)	Information sharing	Institutional structure	Sharing experience	Experience	Community network
	Network of resource persons Network of experts External network	Practice sharing	Ad Hoc Resource Flexible resource	Sharing knowledge and practices	Field of expertise	Solidarity-based community practice network
	Health student mobilisation reserve Citizenship and solidarity platform	Functional links	Ad Hoc Structure	Translating needs into actions Coordination of operations	Relational values (solidarity, commitment, trust) Translation & coordination area Translation & coordination objects	Operational solidarity network

Some solidarity measures were maintained to meet the demand at the beginning of the school year in September, and other, such as the production of hydroalcoholic solution came to a halt with the end of requirements. The successive periods we described in this section show a convergence of objectives then an evolution in the elaboration of meaning that tends to be enriched by the experience of improvisation and some reflections to improve actions in a dynamic and iterative way. From the lockdown lifting, with less urgency, first reflections are carried-out to improve working conditions and anticipate the risks of a potential second wave. The back-to-school period, and the year that follows, is a period of continuous readjustment of protocols to ensure teaching, mainly at a distance. Alongside the continuity of crisis protocols and the return to routines, reflections are nevertheless extended by decision-makers, based on feedback and new questionings. For example, to improve teleworking conditions, to change teaching practices, or to structure a student social policy. We describe in more detail this period of reflection and make the link with the transformation trajectory undertaken by the institution in the next part.

3.5. Sensemaking through improvising in solidarity networks: A potential for transformation

In this section we describe how solidarity networks developed and diffused relational values by improvising responses and making sense in the disrupted context, thus generating a transformation trajectory. We show that transformations were initiated or accelerated with consequences on the institution's organisation and at a larger scale on the territorial ecosystem, thus reinforcing its flexibility and ability to anticipate crises through relational values, such as solidarity or engagement.

3.5.1 Flexibility and diffusion of relational values through improving solidarity networks.

The results show that a networked organisation contributed to the success of the improvisations by providing important material and human resources that enabled the collectives to react and anticipate new actions effectively. Informal networks that acted as flexible resources, but also institutional networks that had already been thought out in advance, facilitated collective improvisation, by making it possible to structure the action adapted to the evolutive needs on the ground. Several respondents, involved in decision-making and coordinating actions, describe a form of capitalisation on the collective experience of improvisation, facilitated by networks, that prepares them for the unexpected:

*It's strengthened. It's something that's completely unlike to anything we've experienced before(...) Because it was a truly unprecedented event, I think we're more prepared for the unexpected. Because we know that the unprecedented is now possible, even if the unprecedented takes another form. I think that at some point we are obliged to develop skills in terms of adaptability, agility and the integration of change. So I think that both on a human level and on a personal level, it's easier to integrate the fact that there's a problem, and that solutions are going to be found. We know that the solutions won't necessarily be immediate, but the fact that we've experienced it, like everything else in fact, we've experienced something, there are things that stick in our memory (...) Tomorrow, it could be war linked to the war in Ukraine, we're able to organise ourselves better. In any case, we can immediately find ways to organise ourselves and mobilise the resources within us that we have already mobilised. **Project manager 2***

Most respondents felt that collective mobilisation and the ability to make sense collectively in this context helped to strengthen the organisation's ability to respond. Also, for most respondents, the ability to make sense by improvising collectively was associated with a feeling of usefulness that motivated action despite the perceived risks and contributed to the well-being of individuals at the height of the crisis. However, they also emphasized the vulnerability of individuals over the long term when the crisis persists. Individual vulnerabilities emerged at the end of the crisis when the period of commitment was over. It appears that group action and interaction had a protective effect on the individuals who were involved in the field. Moreover, the collective mobilisation within the networks led to an increase in interpersonal relations within the institution itself, with consequences that were perceived as beneficial for the organisation:

*Strengthened, no doubt. Increased skills, an increase in the number of people who know each other, quite simply, there are people who have come to know people they'd never spoken to before, and so on. So I think that for everyone in the institution, the number of people they know is greater. We've proved that we can tackle a problem together, et cetera. I have no doubt about that. **Chair Deputy***

It appears that the values upheld by the institution were a driving force and facilitator of the commitment of the many players involved. As the bearer of relational values such as solidarity and commitment, the institute provided fertile ground for the extension of solidarity networks and actions. By improvising new actions, the number of relationships were multiplied, and the informal networks extended within the organisation. The capacity of relational networks to act legitimised existing networks but also prompted decision-makers to think about institutionalising a network-based approach to social issues:

*We're still wondering how we can provide better guidance and better detection. I'm a great believer in detection and local detection. That's also why we set up a network of social referents, which still needs to be consolidated, coordinated, and trained (...) Typically, today the network can act as an early warning system. **Vice-President 1***

By improvising new actions, the informal networks extended within the organisation, but also within the institution's ecosystem. Relationships with partners, were created or strengthened as a result of improvisations driven by common values of solidarity. As part of a local ecosystem, the university was a lever for mobilising social action in times of crisis, but was also able to lead transformative social projects following the crisis:

*I think this has clearly strengthened us, I think we have the networks, we have the tools. (...) And then the networks, we have a special link with ** (Welfare organisation). Of course, we've also worked a lot with the ** (student union) on food aid, on digital aid. We've also worked with them on housing, on a bed for the night at the start of the school year. **Project manager 1***

*Relationships with corporate players, who also want to be involved over the long term in things that aren't just one-offs ** (Bank), we have a press conference tomorrow on the Nightline association, the helpline (...) So we have a new card to play for developing support for students. **Foundation delegate***

These projects show that, in addition to capitalising on experience, the experience of collective improvisation and the achievements built collectively by the networks resulted in a form of material capitalisation, making it possible to remobilise tools (emergency fund, website, etc.), but also of relational capitalisation, making it possible to develop partnerships or bring to fruition solidarity projects that were difficult or impossible to implement before the crisis :

*it was the crisis that accelerated the need to work in networks, to work with players. The emblem is the ** (Welfare organisation) and this is the trajectory. We've just come back from the inauguration of the Agoraé, the solidarity grocery shop. It's the initial trajectory, with the ** (Welfare organisation) in 2020 on the question of food distribution, which responds to the problems of student insecurity in this field, continued in 2021, which today leads to the creation of the Agoraé. Even if the project was there before, it's the interplay of players around it that made it possible. The same goes for the digital support scheme: we came up with the idea, and it was working with various players that made it possible. **Vice-President 1***

Finally, the results show that the improvised actions of the operational networks made a significant contribution to the development of social initiatives and the acceleration of a social policy within the institution. This transformative trajectory of the institution is the consequence of the adaptations established in disrupted contexts, which call into question operating methods and give rise to questions:

In my opinion, what the crisis has revealed, and in any case accelerated, is the institution's social policy. That's fundamental. (...) We have explicitly adapted our regulatory structures to be able to function better, to be able to adapt to the life we've been through over the last two years, so maybe not on all subjects, but the fact remains that the crisis has also forced us to revisit our way of doing things in a legitimate way

*when we distribute money to students. So that's one of the factors that led to the creation of this committee to organise social assistance for students. **Department Director***

In conclusion, this section reveals that the flexibility of the network, which encouraged interaction and rapid action on the ground combined with relational values of solidarity, was a way of collectively making sense to improvise effectively in a disrupted context. Our findings also describe how informal and institutional networks, driven by solidarity and mutual aid, were extended, strengthened, or legitimated. These networks proved their usefulness in times of crisis, but they were also at the source of a transformation trajectory contributing to the development of social initiatives and the expansion of relational values both within the university and in its local ecosystem and to the development of response capacities.

3.5.2 The transformative potential of improvisational sensemaking

In this final part we present the conditions that encouraged transformation after improvisational sensemaking. We highlight the role, ability, and power of decision-makers to engage in a reflective effort to initiate these transformations.

First, our findings mainly describe an acceleration of a transformations already underway, activated by improvisational sensemaking, and conditioned by the positioning of influential decision-makers. By opening the way to collective experimentation and reflexivity, the improvisational sensemaking proved the feasibility of new functioning and practices, sometimes thought of but constrained or considered time-consuming to implement. The accounts show that decision-makers, started to look back on what was achieved through feedback but also looked at issues related to the persistence of crisis practices. The common framework, in perpetual motion and the different perceptions that resulted was then observed and questioned. Thus, decision-makers not only recognised these collective actions and their usefulness, but also questioned the meaning of these actions, their relevance to the present and broadened the questions to a collective scale with the aim to value them.

*we're going to have to reaccompany certain behaviours, or re-learn a certain behaviour to mobilise or rematerialise. I like history, but I've never looked to the past. So we take history, we take experience and we project ourselves into tomorrow. **Dean on component 2***

This reflective sensemaking, and the fact that decision-makers valued these achievements, was then a step towards their institutionalisation thus realising the transformation. For example, the re-evaluation of teaching guidelines for remuneration purposes or the creation of a charter for distance learning practices to protect intellectual property, considering the concerns of teachers,

was ways of supporting the transformation of distance learning practices and then capitalising on the results throughout the university network:

*The feedback from the field is passed on to these Councils by the elected representatives (...) and the aim of the President and the presidential governance team was to promote what had been done. As part of this, the Board of Directors also asked us to review our policy on copyright and respect for copyright, and to draw up a charter in September 2020. (...) which was drawn up as part of the ** (project name) and reused for the 12 other universities. Vice President 2*

This twofold mechanism of reflective sensemaking (retrospective and prospective mechanism) thus contributed to the reconstruction of a new common framework that emerged from the period of improvisation but was rethought collectively under the impetus of the decision-maker. In this way, and as mentioned in the example, the transformative potential of improvisational sensemaking lied in the ability, but also in the will of decision-makers to maintain or not a status quo within the organisation:

*It's up to the association's elected representatives to decide, but given what we've started to build together, yes, it would be a shame to miss out on all that. And what's also really interesting is, in terms of what the university has achieved in terms of transformation, it's really taken charge of the issue of student insecurity and to see how the university can act much more on this subject on its own or with others behind it. They have quite a significant capacity to mobilise. And then, on our side, it's also a work that can go in both directions where today, I think that ** (Welfare organisation) has not sufficiently seized what the university could bring to it. External partner*

Finally, our findings show that the individuals seek to regain a form of normality and stability by avoiding or not taking time for feedbacks. The temptation to forget a period that was disrupted and highly stressful for individuals was reported by operational players who were nonetheless committed to improvised action. An effort to take time for reflexivity on the part of collectives, or decision-makers, was necessary to face the temptation to forget or to neglect the feedback. Moreover, recognition of the need to pursue actions initiated during the crisis and the resources needed to institutionalise new frameworks was achieved through the influence of decision-makers who drove change and act as sense givers. Once again, networks were a means of consolidating transformations and spreading them beyond the organisational level.

It's a real continuity, because the aim of this network is to ensure that the importance of student and campus life issues is recognised at a political level. And behind that, there are 2 areas we're fighting for: resources to deal with student vulnerability. And then, more generally, to recognise, or at least try to ensure that student life and campus life are truly enshrined in law as a mission of the institutions. (...) There's this idea of being able to influence because when you're in this type of network, you're inevitably interacting with the top of the pyramid. So that means exchanges with the ministry,

exchanges with people in high places, other networks, so it's also how all that influences. **Vice-President 1**

To conclude, our findings show that a trajectory of transformation depends on the ability and will of decision-makers to recognise what has been achieved collectively and to give the impetus to the conception of a new common framework despite the temptation to forget the disrupted and highly stressful period. A twofold mechanism of reflective sensemaking driven by decision-makers contributed to the conception of a new common framework that emerged from the period of improvisational sensemaking. Transformative potential of improvisational sensemaking lies in the ability of decision-makers to engage reflexivity at different levels of the organisation, but also in their will to maintain or not a status quo within the organisation.

Discussion and conclusion: the transformative potential of improvising solidarity networks

In this last part we discuss our findings to answer the following research question: **How can solidarity networks that make sense by improvising in a disrupted context finally transform the organisational environment?** To answer this question, we review the literature on extreme contexts, improvisation and sensemaking, and then study how novel and improvised initiatives of an academic institution in a disrupted context (Hällgren et al., 2018) initiated transformations. We put in evidence innovative results: our results highlight that solidarity networks make sense by improvising in a disrupted context, and that such network improvisation sensemaking has the potential to transform an organisation. Observing some transformations after the improvisation period, we conclude that organisations can learn from their improvised actions (Vera & Crossan, 2005) if they value them to better cope in a disrupted context, by creating dedicated organizational means and adapt their practices. Considering these results, we now provide some discussions, before concluding.

First, we observe that improvisational sensemaking (Schildt et al., 2020) is grounded on solidarity networks, in a disrupted context (Hällgren et al., 2018). In our case study, we highlight that the flexibility of networks combined with relational values of solidarity, facilitate the response. By participating in the development of relationships within the organisation and enabling the diffusion of relational values, at both the organisational and ecosystem level, improvising networks are source of a transformation trajectory. These solidarity networks contribute to the development of initiatives and the expansion of relational values both within the organisation and in its ecosystem.

Secondly, we observe that improvisational sensemaking accelerates or initiates new practices and new projects which transform the organisation. Indeed, improvisations, by extending, strengthening, or legitimating informal and institutional networks driven by solidarity and mutual aid, transform the organisation's ecosystem. However, our findings also show that individuals seek to regain a form of normality and stability by avoiding or not taking time for reflexivity (Roux-Dufort, 2010). An effort to take time for reflexivity is necessary to face the temptation to forget or to neglect a possible experience feedback to capitalise on the achievements. This mechanism testifies of different trajectories that can vary according to certain conditions.

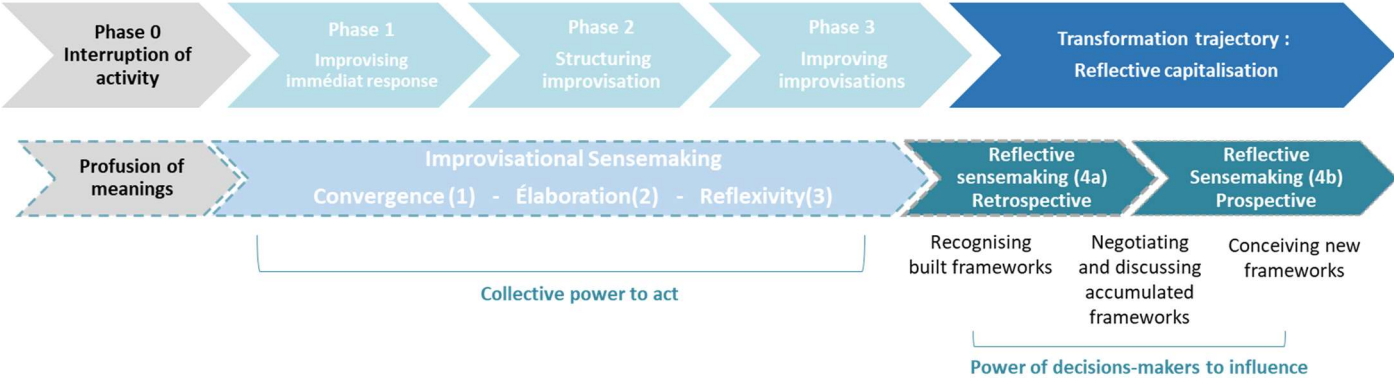
At third, we show that, in the disrupted context, improvised networks can make sense from improvisation in successive phases, confirming some other survey, from an improvisational mode to a reflective mode (Stigliani & Ravasi, 2012, Schildt et al., 2020). Our findings also show that improvisational sensemaking in a disrupted context has the potential to transform practices and the organisational environment in the long term only when decision-makers engage in a reflective sensemaking, successively retrospective and prospective. This mechanism is set in motion when decision-makers recognise, and search to value what has been developed by improvisational sensemaking, discuss and give impetus to the design of a new common framework. Therefore, with this contribution, we enrich knowledge about improvisational sensemaking, by linking this mechanism to the mechanism of reflective sensemaking (Schildt et al., 2020) and we introduce the notion of transformative potential of improvisational sensemaking to enrich theories of practice (Orlikowski, 1996).

Then, we introduce the concept of reflective capitalisation, to analyse the period following improvisations. It consists of recognising past actions, deconstructing, and questioning the present by imagining possible transformations. This reflective capitalisation depends on the ability of managers and decision-makers to take a step back from what has been achieved and to question these actions (retrospective sensemaking mechanism) to envisage (prospective sensemaking mechanism) a new common framework. We compare this backward and forward mechanism with a processual approach of sensemaking, which considers the temporal and continuous dimension of sensemaking (Gephart & Al., 2010). It describes how collectives strategically elaborate meaning by anticipating their future actions (Sandberg & Tsoukas, 2015) based on past events and present time.

The following figure summarizes our theoretical contributions: the first sequence describes the improvisation mechanism in three successive phases after the interruption of the activity (Phase

0): improvising immediate response (Phase 1), structuring improvisation (Phase 2), Improving improvisations (Phase 3) followed by a trajectory of transformation initiated by a period of reflective capitalisation (4). The second trajectory of the model describes the sensemaking mechanism that accompanies this improvisation (Improvisational sensemaking). This period starts with a convergence of objectives (1), then become increasingly elaborate (2), evolving into a more reflective phase (3). These phases are followed by reflective sensemaking starting with a retrospective period (4a) and then a prospective period (4b). Improvisational sensemaking relies on the collective power to act, while reflective sensemaking relies on the power of decisions-makers to influence transformation. Reflective sensemaking implies recognising the frameworks built up during improvisational sensemaking, negotiating, and discussing the accumulated frameworks and conceiving new common frameworks.

Figure 1 – The transformative potential of improvisational sensemaking



In conclusion, this study has several implications for management practices. First, we propose to support the development of improvisation by organisational means in line with the phases of improvisational sensemaking. Formal and informal networks were a rapid way of bringing people together towards a common goal during the crisis response phase. We recommend promoting material resources, to support the formation of informal networks and the institutionalisation of institutional networks that bring decision-making closer to the ground. Then, members of the university built up actions by relying on informal and flexible networks to transmit information, bring in material and gather human resources, with a wide range of skills, adapted to changing needs. We recommend promoting managerial and material resources to support networks build simple and flexible tools such as shared tables, plans or diagrams and

areas for sensemaking, such as crisis units, simulation spaces, or operational platforms to support improvisations.

Finally, a transformation trajectory was based on the reflexivity of decision-makers, giving impetus to the design of a new common framework. This reflexivity strengthened flexibility and therefore the ability to anticipate crises, thanks to relational values such as solidarity and commitment. We recommend supporting the forward-looking abilities of decision-makers by focusing on a period of capitalisation. Reflective capitalisation should enable managers and teams to discuss new working frameworks based on experience, looking to the future. Creating sufficient time for reflexivity, enabling failures and successes to be questioned can lead to effective transformations that reinforce flexibility and ability to anticipate crises, and develop relational values, such as solidarity or commitment to better respond better in extreme contexts.

The limitations of this case study lie in the two-year period covered after the march 2020 lockdown. We could consider a longitudinal study to better observe sustainable transformations. In addition, our study focuses on disrupted contexts. Future research could include studies of other types of extreme context to understand how improvisational sensemaking transform the organisational environment.

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